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Focke et al.

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[45] **Oct. 24, 1978**

[54] **PACKAGE WITH A HINGED LID**

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[73] Assignee: **Focke & Pfuhl,** Verden, Germany

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Dec. 15, 1976 [DE] Fed. Rep. of Germany 2656702

[51] **Int. Cl.**[2] **B65D 5/66;** B65D 85/10
[52] **U.S. Cl.** ..... **229/44 CB;** 229/16 A
[58] **Field of Search** ..... 229/44 CB, 16 A

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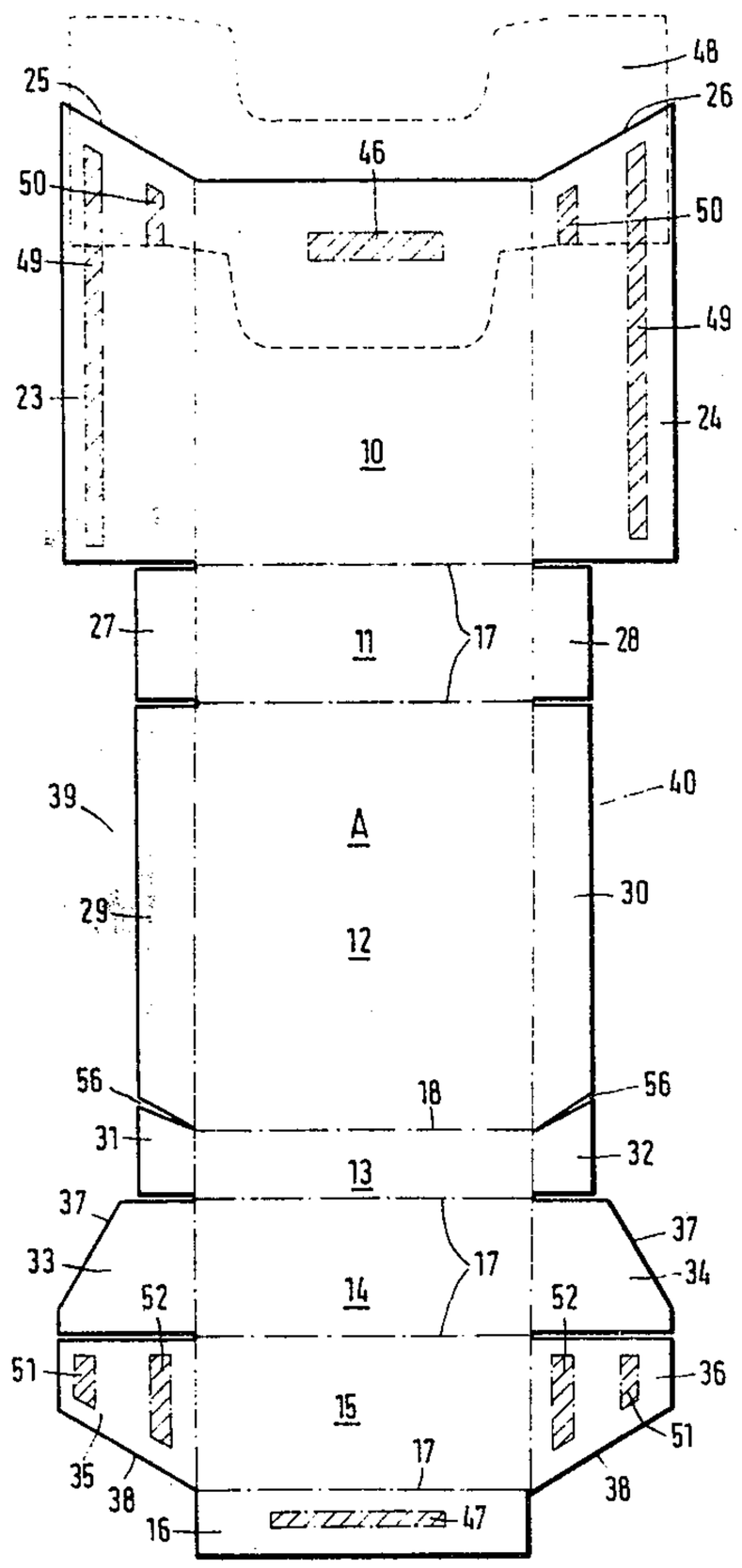
Attorney, Agent, or Firm—Sughrue, Rothwell, Mion, Zinn and Macpeak

[57] **ABSTRACT**

The invention concerns a package with a hinged lid and consists of a collar made out of a separate blank, especially to enclose cigarettes, and of a blank with successive portions of the blank for the front wall, bottom, back wall, lid back wall, lid top surface and lid front wall, each with side flaps or side strips to form side walls and lid side walls, which are spaced along a separating line that runs from the front side to the back side of the package.

17 Claims, 13 Drawing Figures



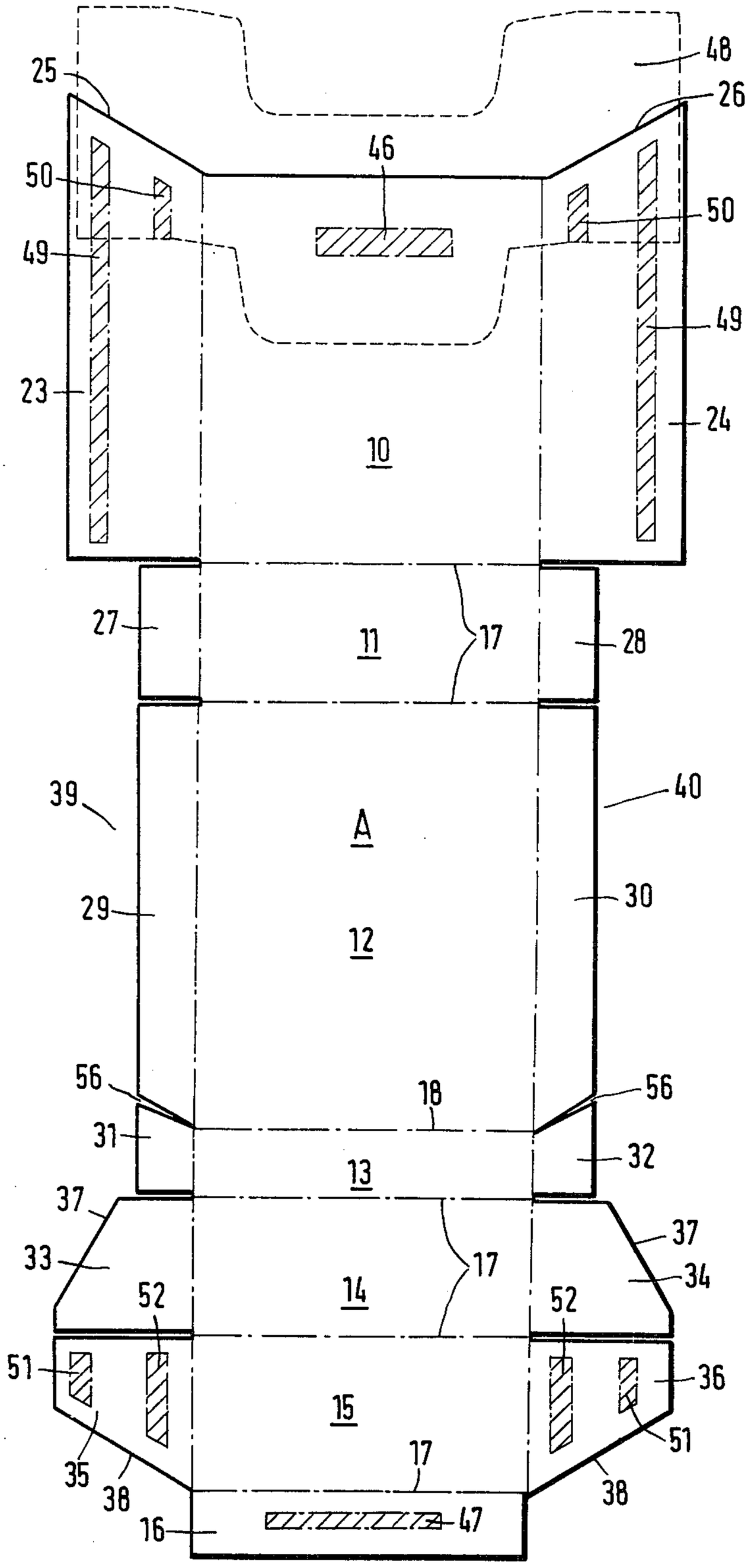

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Fig.1

Fig.2

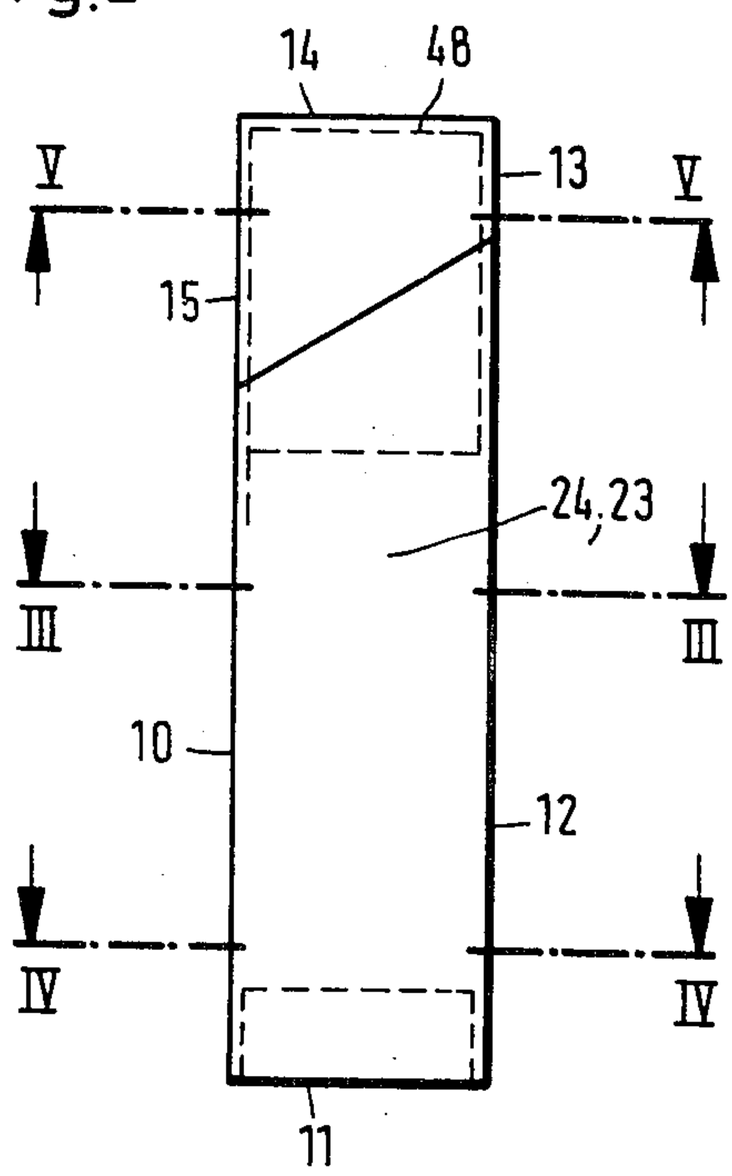

Fig.3

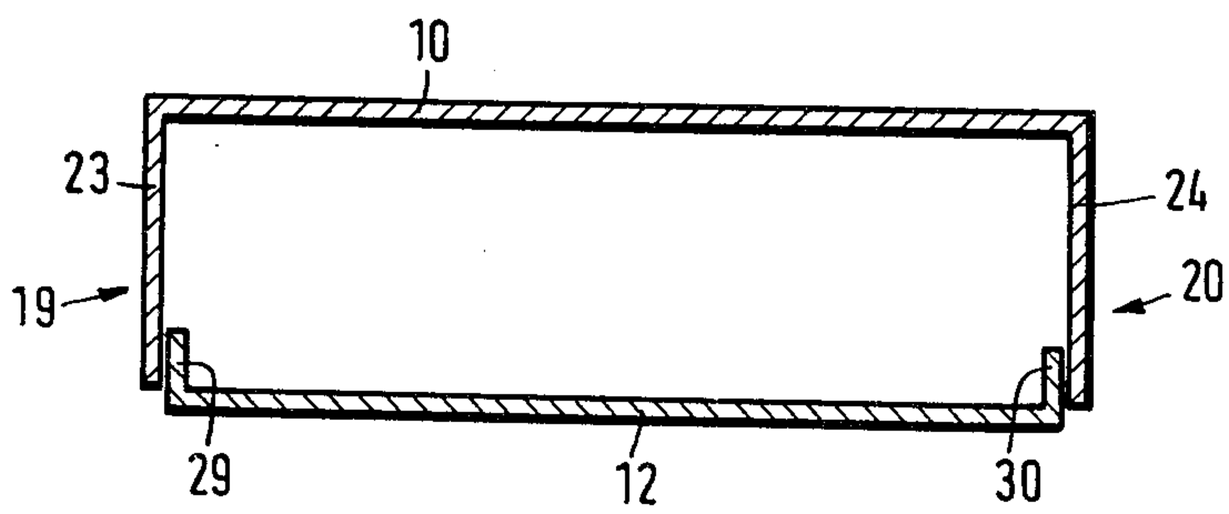

Fig.4

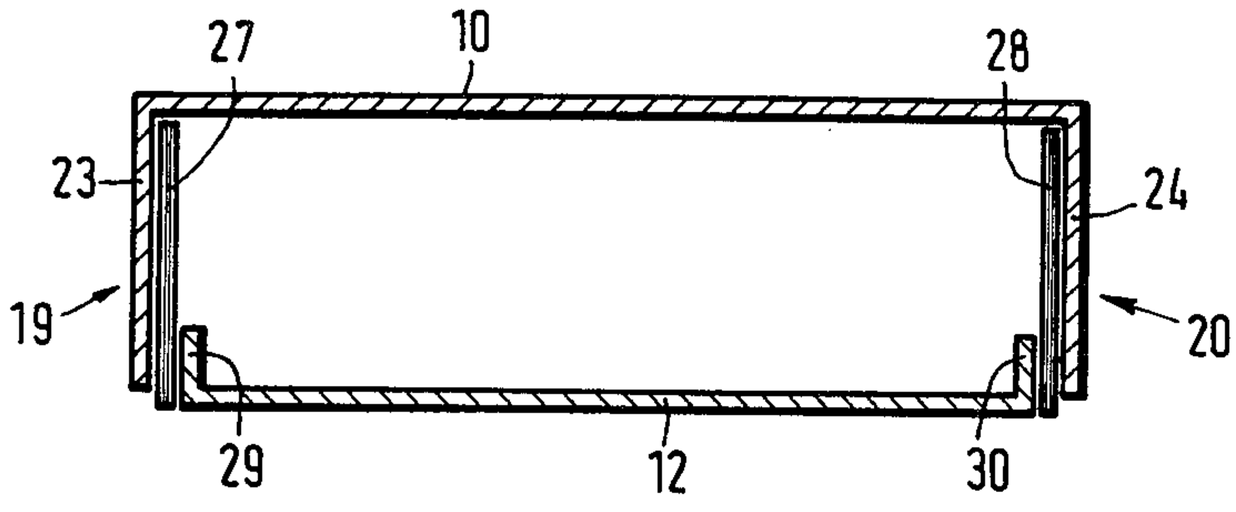

Fig.5

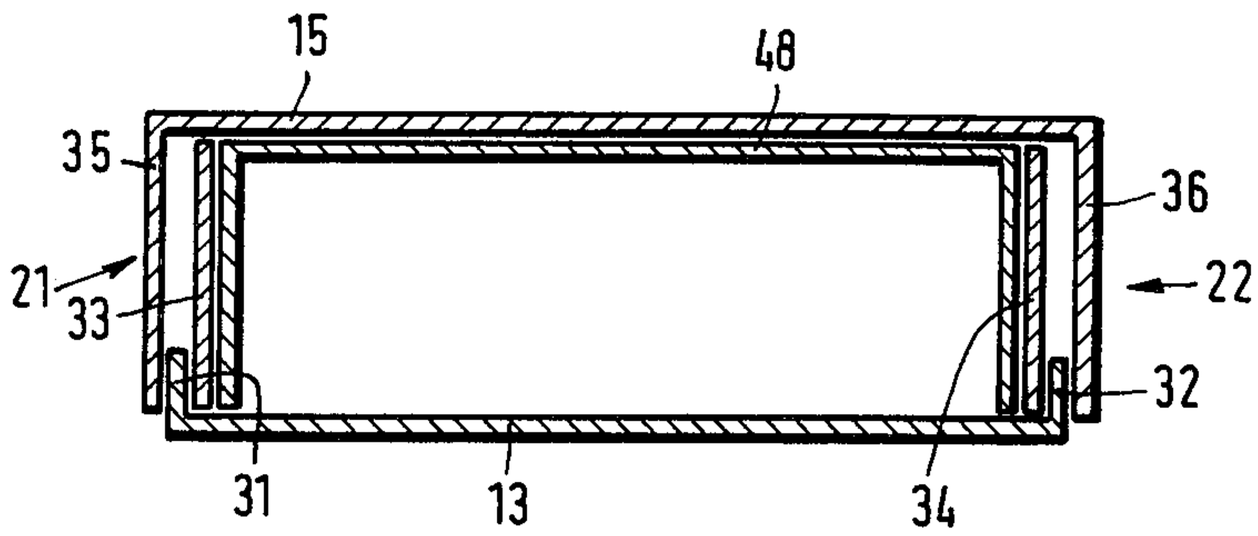

Fig.6

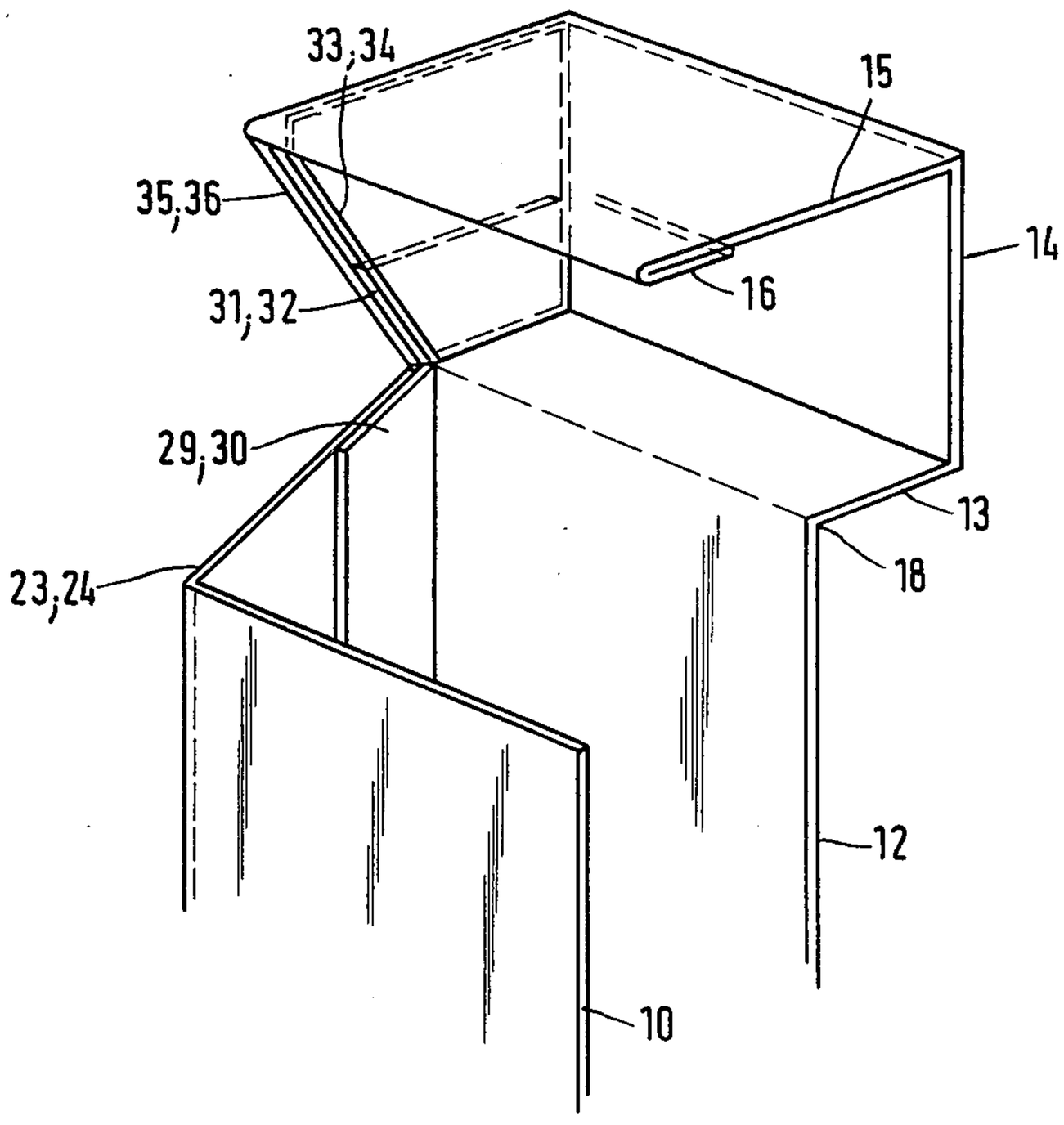

Fig.7

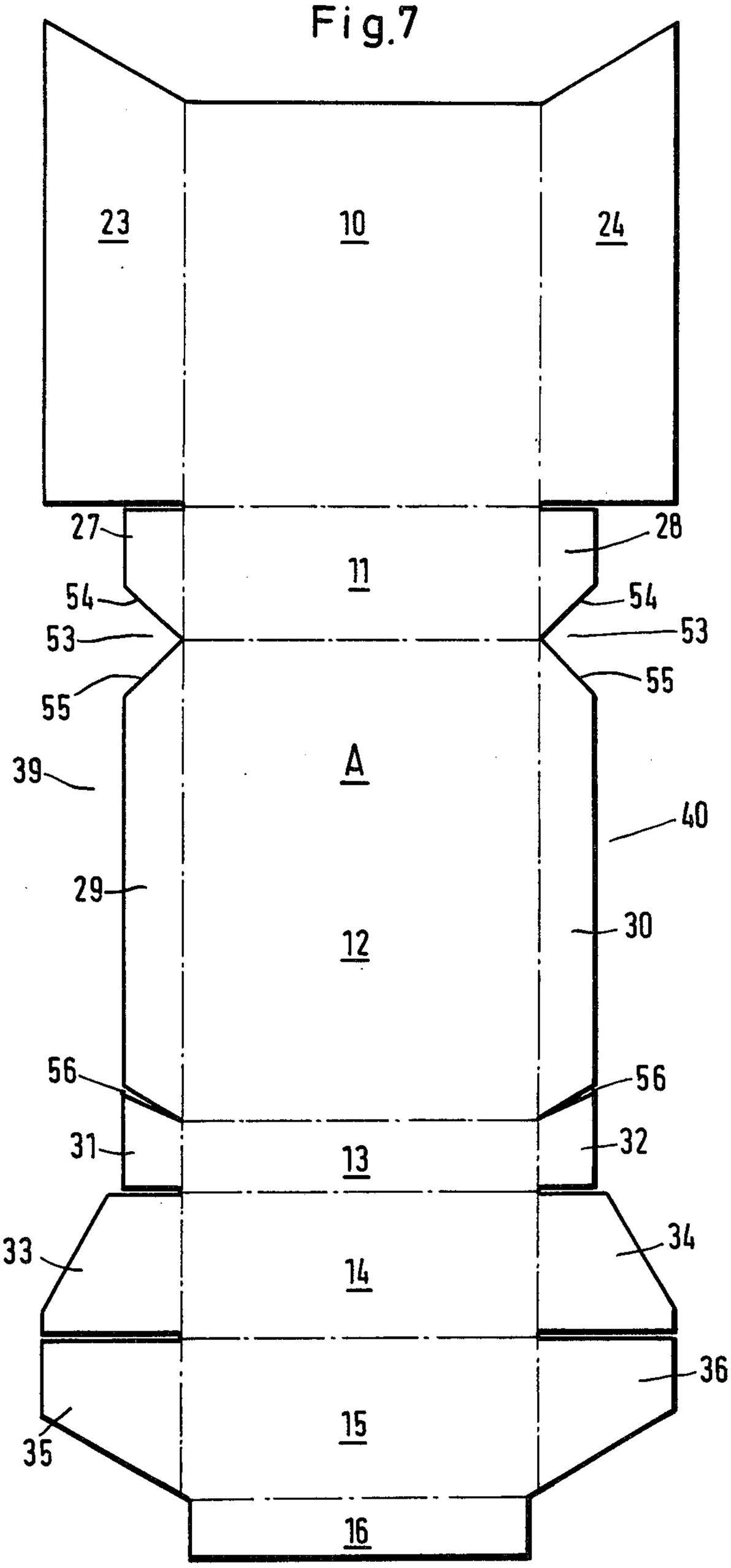
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Fig.8

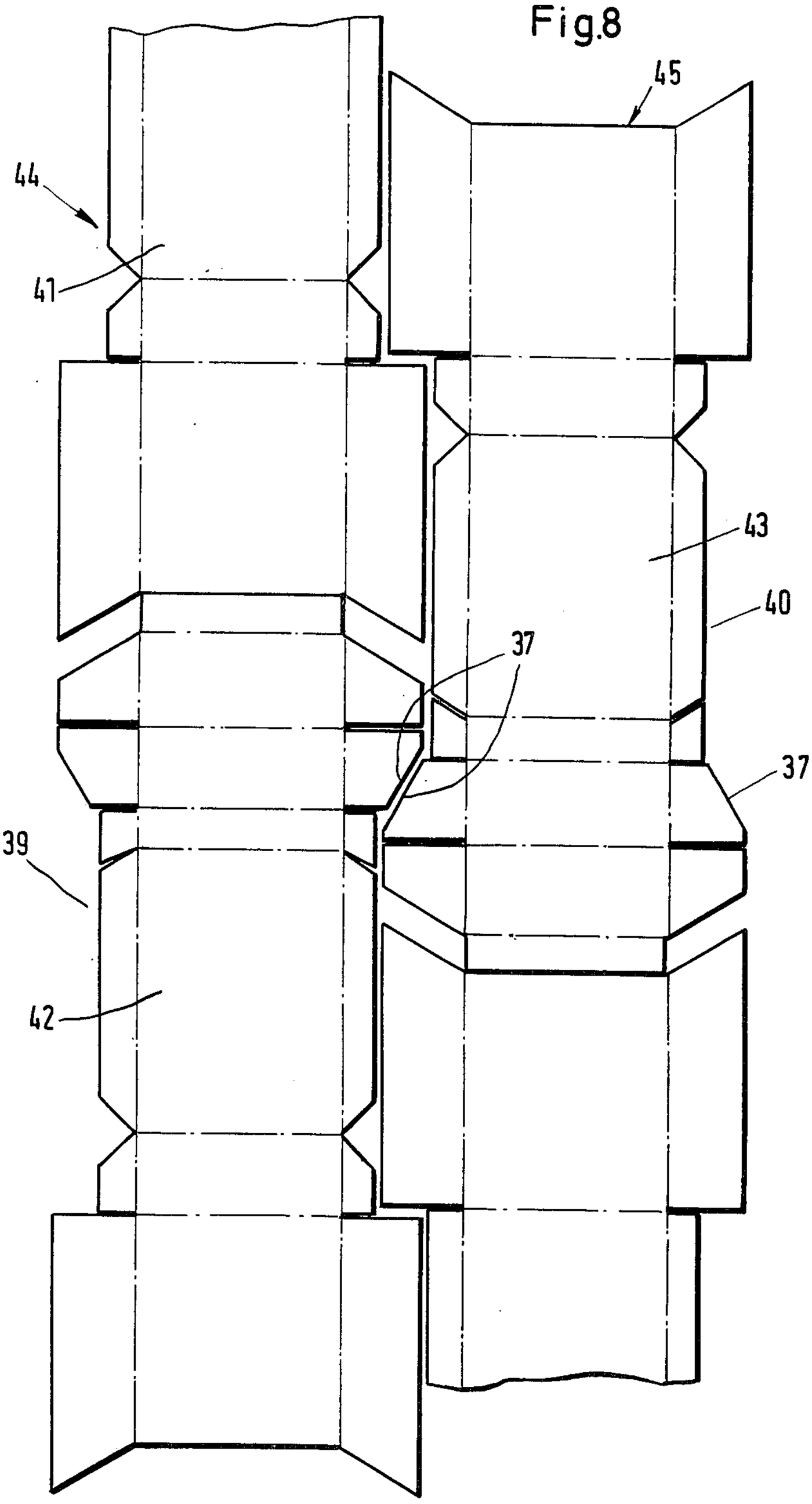

Fig.9

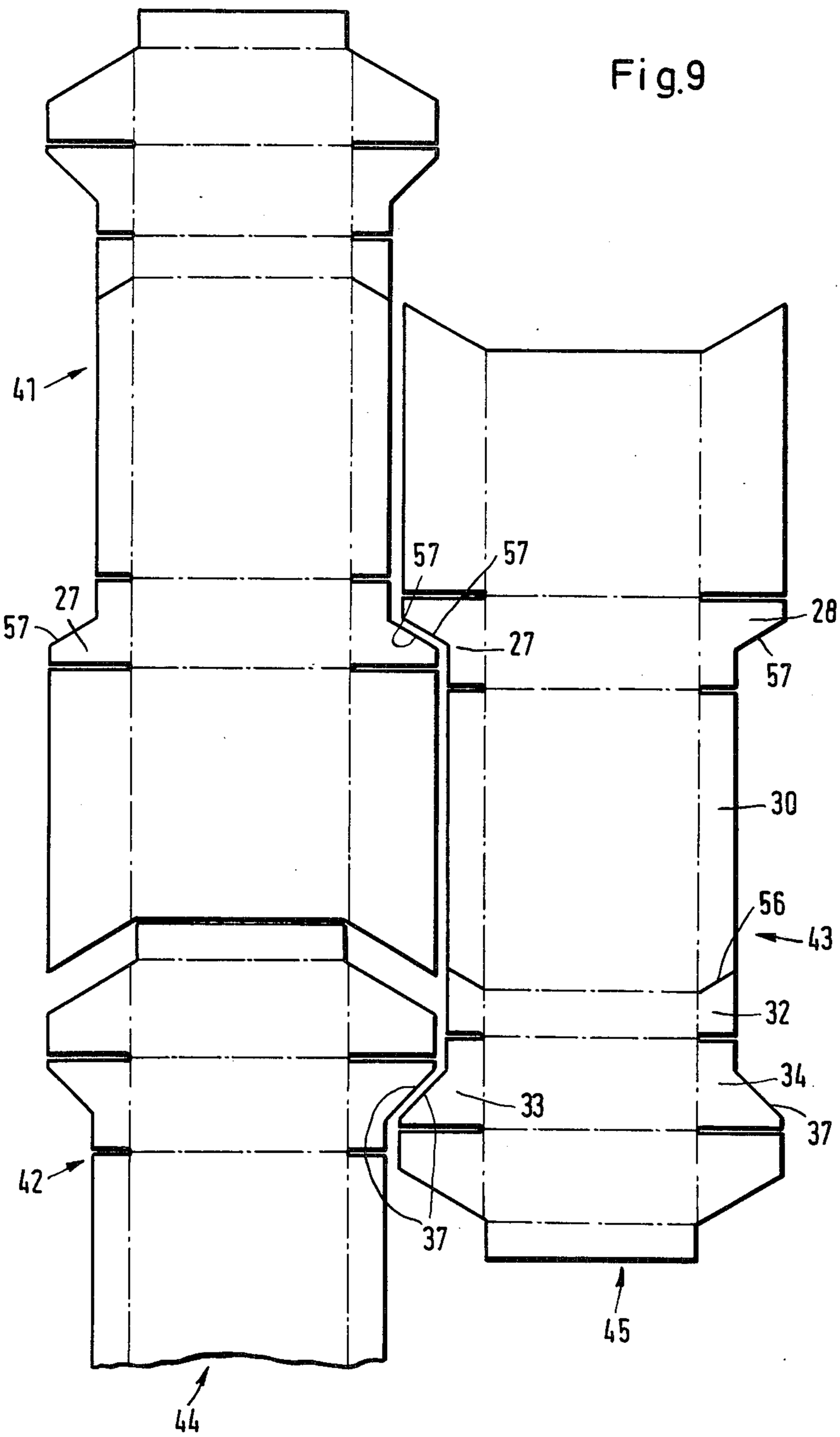

Fig.10

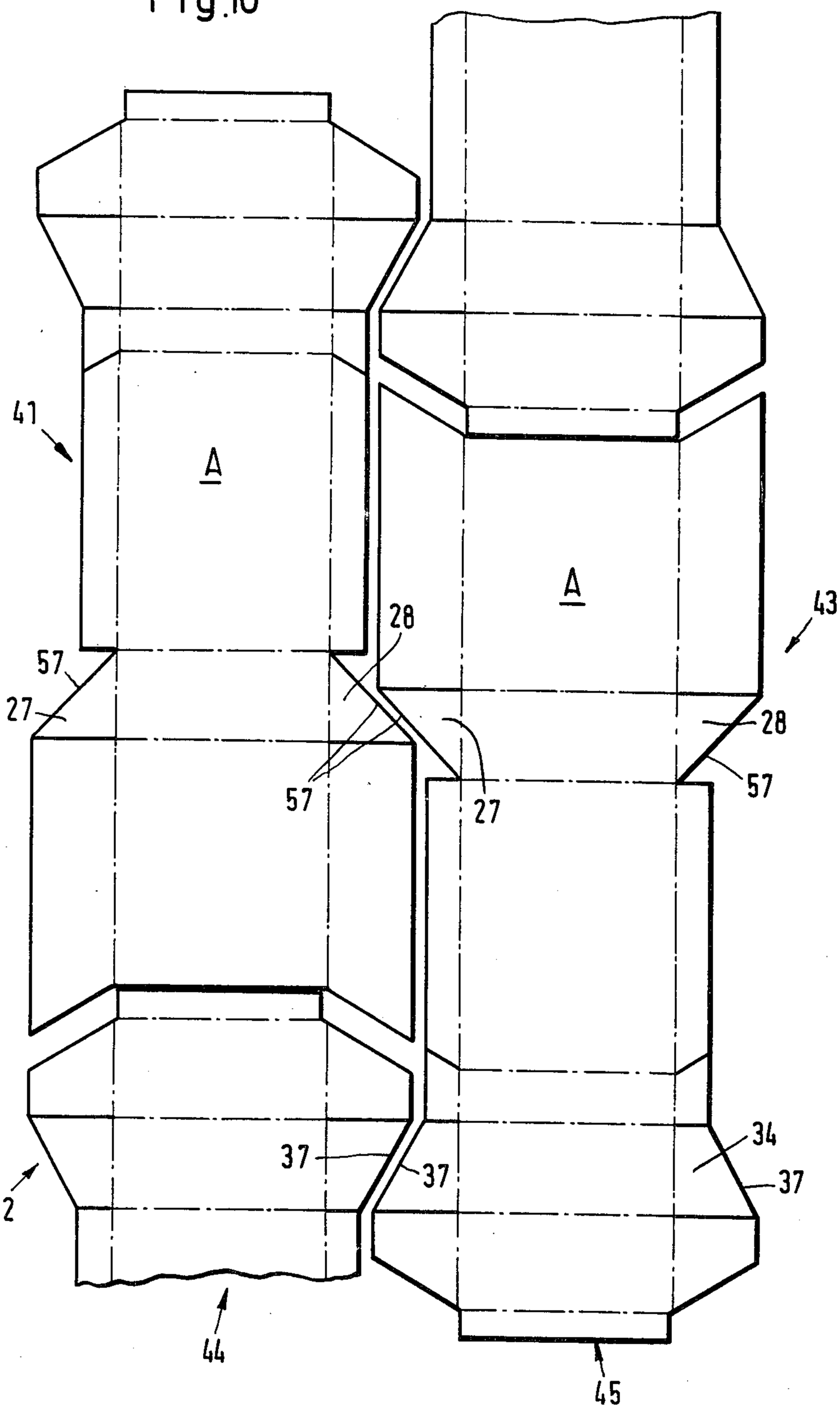

Fig.12

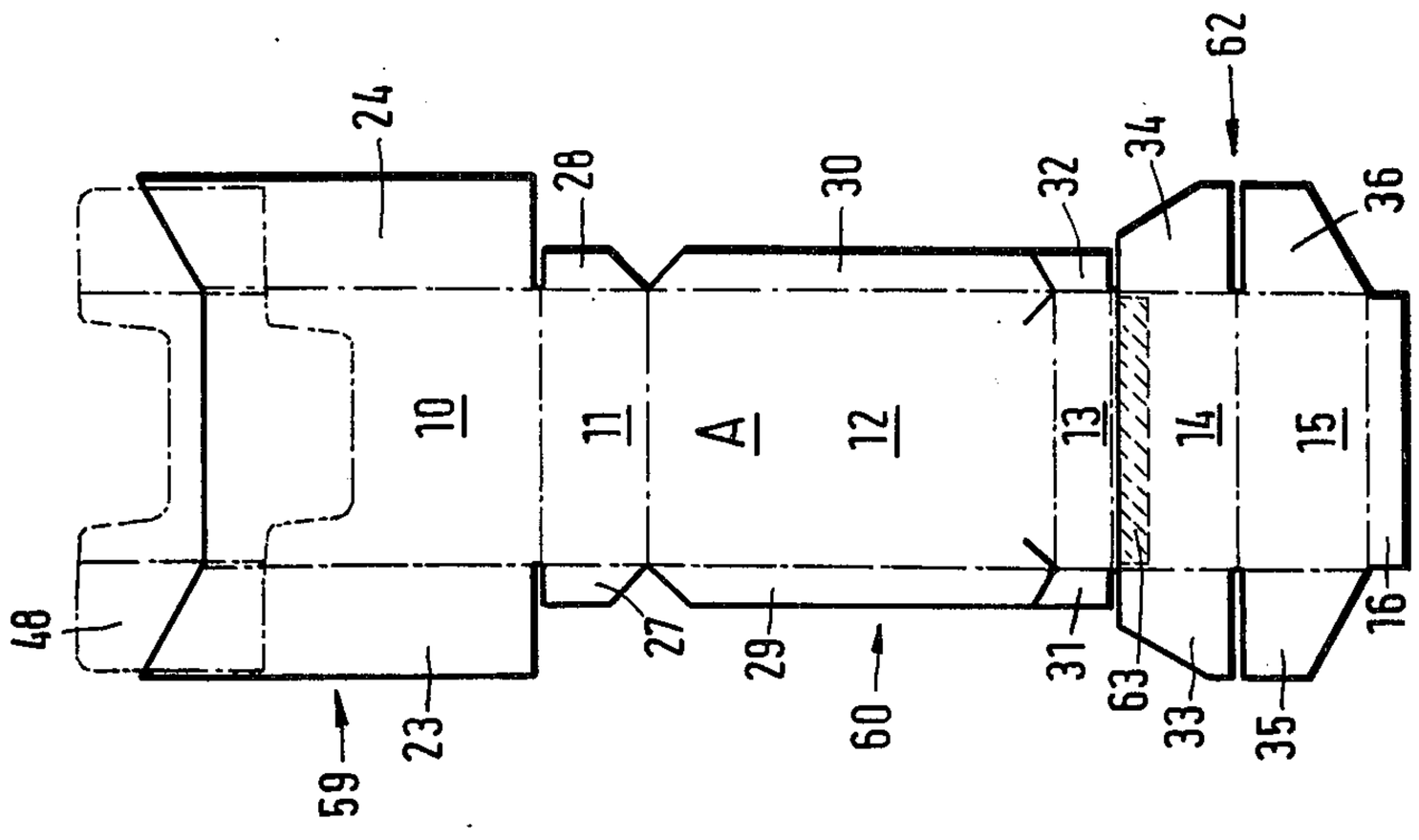
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Fig.11

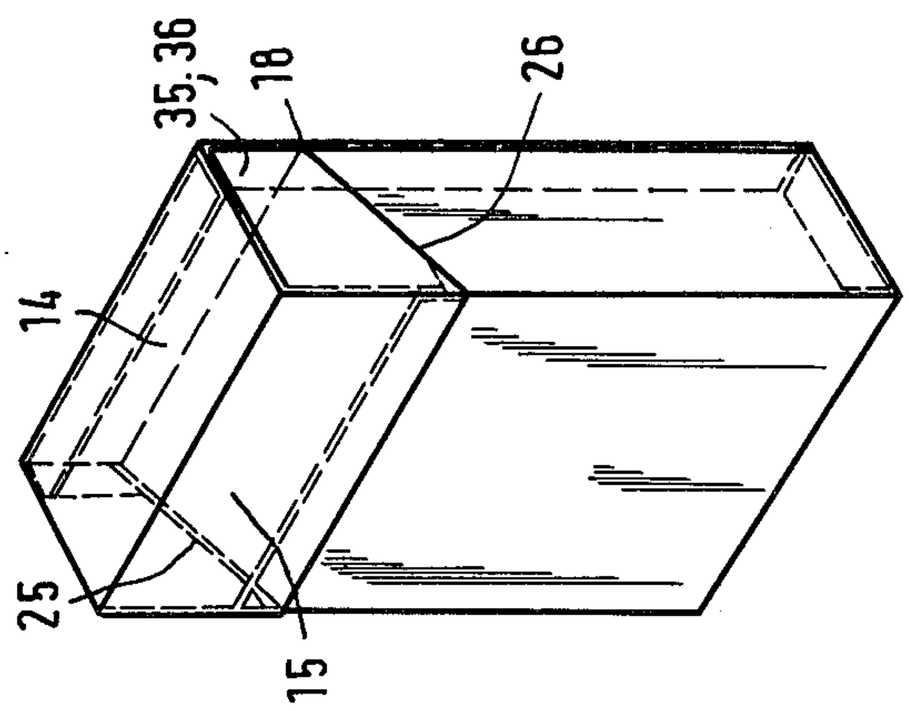
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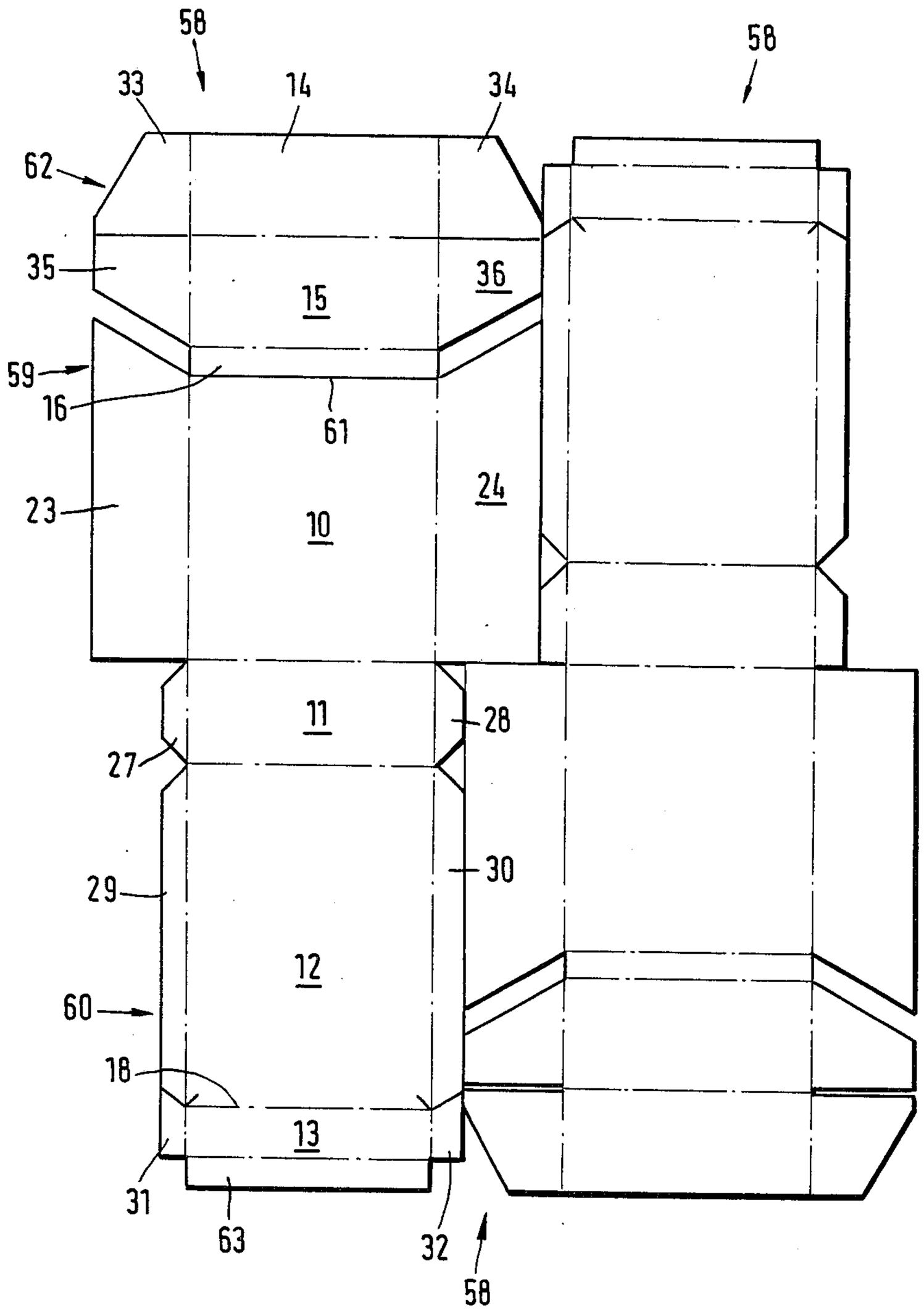
Fig.13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PACKAGE WITH A HINGED LID

SUMMARY OF THE INVENTION

The relatively expensive construction of this type of package requires a blank that is complex and wasteful of material. The purpose of the invention, therefore, is to so arrange the blank for the production of this type of box having a lid, that first, the blank itself requires less packaging material, and second, an additional saving of material is achieved in that within one web of the packaging material the neighboring blanks require less material because of an alternating tooth-like engagement.

To accomplish this purpose, the package according to the invention is characterized in that the outer side flaps of side flaps of the lid that border the front wall, lid front wall and lid top surface are provided with dimensions that correspond with the dimensions of the side walls or lid side walls of the package, and the inner side strips or inner lid side strips that border the back wall, the bottom, and the lid back wall have a smaller width than the side walls or lid side walls.

The novelty of the invention is accordingly found in that chosen areas of the blank are formed with decreased dimensions. These areas of the blank lie exclusively on the inside of the package. The result of this is that the outer appearance is indistinguishable from previous models.

The blank for the production of this type of package is obtained according to the invention in various manners. Accordingly, it is possible to obtain the blank directly and in one piece by a relative arrangement on a surface of the packaging material by cutting it, for example, by punching or from a continuous strip of the packaging material. But it is also possible to obtain, also by stamping, a special preform of a blank. From this preform a part is then separated and placed in a different location to form the blank according to the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. **1** shows an exemplary embodiment of a spread out blank;

FIG. **2** shows a simplified side view of a package with a lid formed from the blank according to FIG. **1**;

FIG. **3** shows a horizontal section along the covered pack according to FIG. **2** along the line III—III;

FIG. **4** shows a horizontal section aling the line IV—IV of FIG. **2**;

FIG. **5** shows a corresponding cross section along the line V—V of FIG. **2**;

FIG. **6** shows a perspective view of the lid section of the package with a lid as seen when open;

FIG. **7** shows an additional embodiment of a blank in an illustration similar to FIG. **1**.

FIG. **8** shows a partial view of a strip made of the packaging material with blanks according to FIG. **7**;

FIG. **9** shows a partial view of a strip in an illustration similar to FIG. **8** with a further embodiment of the blanks;

FIG. **10** shows a partial view of a strip according to a further blank embodiment;

FIG. **11** shows a completely folded, closed package with a lid in perspective illustration;

FIG. **12** shows a blank according to the invention produced by another method; and

FIG. **13** shows a nested preforms as intermediate products for the production of a blank according to FIG. **12**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The blank shown in FIG. **1** serves to produce a hinged lid package as shown in a simplified side view in FIG. **2** and in perspective in FIG. **11**. The blank consists principally of a one-piece main portion A with folding flaps arranged on the sides thereof. The one-piece main portion of the blank consists of surface areas for the formation of a front wall **10**, a bottom **11** and a back wall **12** of the actual box. Furthermore, surface areas are connected to the back wall **12** and thus belong to the blank main portion A that form the cover or lid, namely a lid back wall **13**, a lid top surface **14** and a lid front wall **15**. The surface defining the cover front wall **15** is provided along its free edge with an inner lid flap **16** formed as a narrow strip. The previously mentioned surface areas of the blank border each other across lateral folding lines **17**. The cross-over between the back wall **12** of the box and the back wall of the cover **13** forms a lateral hinged axis **18**. The lid for the box can be rotated in a known manner relative to the box around this axis **18**.

On most of the areas of the blank being described, additional surface areas, namely folding flaps, are joined onto the sides to form side walls **19** and **20** of the package as well as lid side walls **21** and **22**, as shown in FIGS. **3** and **5**, respectively.

In the area of the front wall **10**, side flaps **23** and **24** are arranged which in the folded package lie on the outside, covering the full surface or width of the side walls **19** and **20**. The free narrow edges of these side flaps **23, 24** are provided with angled corners **25** and **26**, that extend in a known manner into the area of the side walls **19** and **20** along the correspondingly angled corners of the lid.

Corner flaps **27** and **28** are arranged at the sides of the bottom portion **11**, but are not directly connected to the side flaps **23** and **24**. The same is true of the side flaps **29, 30** that are joined to the sides of the back wall **12** running in the same direction as the length of the blank. These flaps **29, 30** lie on the inside of the finished package and are connected with the outer side flaps **23, 24** or the corner flaps **27, 28**.

The back wall **13** of the lid is provided on the sides with center flaps **31** and **32**, which are separated from the inner side flaps **29** and **30** by angular cuts **56**.

The top surface **14** and the front wall **15** of the lid have side flaps **33** and **34**, **35** and **36**, which partially extend about as far as the width of the outer side flaps **23** and **24**. The side flaps **35** and **36** of the lid, that are arranged in the present example on the front wall **15** of the lid, lie on the outside of the side walls **21, 22** of the lid. The dimensions and configuration of these lid side flaps **35, 36** is such that the trapezoidal outer surfaces of the lid side walls **21, 22** are completely covered. In the embodiments according to FIGS. **1, 7, 8** and **10** the inner lid side flaps **33** and **34** also have dimensions such that the inner side of the lid side walls **21, 22** are completely covered. Because the lid has angled edges on its sides that match the bordering angled edges of the box sides, the lid side flaps **33, 34** or **35, 36** are accordingly provided with angled, aligned edges **37** or **38**.

The blank thus constructed forms somewhat eccentrically-lying side recesses **39** and **40** because of smaller cross measurements.

Because of this contour of the blank, it is possible to place them in an inverted staggered manner on a continuous strip of packaging material, nested in or mating with each other, thereby saving material.

A segment of such a packaging strip is illustrated in FIG. **8**. Accordingly, the blanks **41**, **42**, **43** are arranged in blank rows **44**, **45**, each running in the direction of the length of the strip. The blanks **41**, **42** of a blank strip **44** are arranged in the longitudinal direction of the length of the strip and are staggered relative to the blanks **43** of the neighboring blank strip **45**. For reasons of illustrative clarity, spaces are shown between the blanks of the strips **44**, **45**, which are not present between the actual strips.

Both the lid side flaps **33** and **35** or **34** and **36** of the blank **42** and the outer, wide side flaps **23** or **24** of an additional blank **41** in the same blank strip **44** extend into the recess **39** or **40** of a blank **43** in such a manner that the blanks form fit against each other. When so postioned, the angled edges **37** of the blanks **42** and **43** of neighboring strips abut each other. The wide side flaps **23** or **24** of the staggered blanks **41** and **43** lie longitudinally opposite each other with the angled end edges.

An alternate embodiment of a blank that is similar in principle to the one already described can be seen in FIG. **9**. The recesses **39** and **40** extend here partially into the area of the inner side flaps **33** and **34** of the lid on one side and of the corner flaps **27** and **28** on the other side.

The previously mentioned portions of the blank are accordingly formed in one area in the width of the narrow side flaps **29** and **30**, and in one area in the full width of the side flaps **23** and **24**. Between these areas of the mentioned folding flaps angled transistion edges **57** (with the corner flaps) and angled edges **37** are formed. The previously mentioned angled edges **37** and **57** of neighboring or successive blanks thereby abut each other.

A further embodiment of a blank can be seen in FIG. **10**. The corner flaps **27** and **28** are here formed as triangular folding flaps. The thus produced outer angled transition edges **57** extend from the outer point, where it extends to the width of the side flaps **23**, **24** to the border of the main portion A of the blank. Here, too, edges **37** of two blanks and edges **57** of two blanks abut one another.

Details of a flip top box produced from a blank according to FIG. **1** are seen in FIGS. **2** through **6**.

In the area of the bottom **11**, the portions of the blank are folded (FIG. **4**) so that the corner flaps **27** and **28** extend between the narrow inner side flaps **29**, **30** on one side and between the outer side flaps **23** or **24**. The folding, for example, with the use of a device according to German Offenlegungsschrift No. 2,440,006 — progresses in such a manner that first the side flaps **29** and **30** are folded, then the corner flaps **27** and **28**, and finally the side flaps **23** and **24**.

The lid is constructed in a special manner. As can be seen in FIGS. **5** and **6**, the lid side flaps **35** and **36** that joined the lid front wall **15**, lie on the outside of the lid side walls **21** and **22**. Their trapezoidal surface is completely covered by the previously mentioned lid side flaps **35** and **36**. Similarly, the inside side flaps **33** and **34** of the lid top surface **14** are arranged to cover the full surface of the side walls **21**, **22** of the lid. In between extend the center flaps **31** or **32**, whose angled edges are flush with the corresponding edges of the lid.

The blank is provided in a special manner with gummed areas **46** or **47** as well as gummed strips **49**, **50**, **51**, **52**. These single gummed areas **46**, **47** are not preapplied on the spread out blank, for example in the blank magazine, but rather they are applied in the packaging machine after the packaging process has advanced somewhat, so that freshly applied gummed areas **46**, **47** free from dirt, etc., can always be worked with.

First, gummed areas **46**, **47** are applied, of which the first serves to attach a collar **48** on the inside of the front wall **10**. By means of the gummed area **47**, the inner flap **16** of the lid is connected with the front wall **15** of the lid.

The gummed strips **49** and **50**, i.e. **51** and **52** are then applied in the area of the outer side flaps **23** and **24**, as well as on the outer side flaps **35**, **36** of the lid. The relatively short gummed strip **50** serves to fix the collar **48** on the inner side of the side flap **23**, i.e. **24**, which is exposed in this area. The connection with the side flaps **29** and **30** is produced by the gummed strip **49** that extends roughly over the full height of the side flaps **23**, **24**.

The three layer connection in the area of the lid side walls **21**, **22** is produced by the gummed strips **51** and **52**. The gummed strip **51** connects the outer side flaps **35**, i.e. **36** of the lid with the corner flap **31**, i.e. **32**, while the gummed strip **52** glues the outer side flaps **35**, **36** of the lid to the inner side flaps **33**, i.e. **34** of the lid. In this manner a statically stable and sturdy construction is formed.

The blank according to FIG. **7** is modified in the area of the bottom **11** as compared to that in FIG. **1**. The areas of the corner flaps **27** and **28** that are directed towards each other and the side flaps **29** and **30** are provided with a triangular cut **53**. The previously mentioned portions of the blank are accordingly blocked by the angled edges **54** and **55**. This construction causes in the folded box, that the corner flaps **27**, i.e. **28** and the associated side flaps **29** and **30** lie at a level, whereby the edges **54** and **55** abut one another. The concerned portions of the blank thus abut as if mitered.

The blank shown in FIG. **12** corresponds to that in FIG. **7**, but is produced by a different process. Here, preforms **58** are first produced as an intermediate product (FIG. **13**), namely by separation from a strip of the packaging material. The preforms **58** are formed so that an exclusive wide portion **59** of the blank and an extremely narrow portion **60** of the blank, each having the same length, join together. In this manner it is possible by turning the preform **58** by 180° to box them together with practically no failures.

A piece **62** (consisting of the lid top surface **14**, lid front wall **15**, and lid inner flaps **16** with the connected side flaps) is then separated from this preform **58** along a separating line **61**, and placed at a different position, namely above a connecting flap **63** on the lid back wall **13**. The foldable blank according to FIG. **12** is produced in this manner.

What is claimed is:

1. A package with closable lid including a collar made from a separate blank, especially to enclose cigarettes, and a blank with successive portions thereof for the front wall, bottom, back wall, lid back wall, lid top surface and lid front wall, each with side flap strips to form side walls and lid side walls, which lie along a separating line that runs at an angle from the front side

of the package to the back side, characterized in that the outer side flaps (**23, 24**) i.e. lid side flaps (**33, 34; 35, 36**) that join the front wall (**10**), lid front wall (**15**) and lid top surface (**14**) are formed with dimensions that correspond with the dimensions of the side walls (**19, 20**) i.e. lid side walls (**21, 22**), and the inner side flaps (**29, 30**) i.e. corner flaps (**27, 28**) as well as center flaps (**31, 32**) that join the back wall (**12**), the bottom (**11**) and the lid back wall (**13**) having a smaller width than the side walls (**19, 20**) i.e. the lid side walls (**21, 22**).

2. A package according to claim **1**, characterized in that all of the inner folding flaps (**27, 28; 29, 30; 31, 32; 33, 34**) are joined exclusively and directly to a main portion (A) of the blank and have at least in some areas a smaller width than the outer folding flaps (**23, 24; 35, 36**).

3. A package according to claim **2**, characterized in that the side flaps (**29, 30** i.e. center flaps **31, 32**) respectively associated with the back wall (**12**) and the lid back wall (**13**) are completely and the corner flaps (**27, 28**) i.e. lid side flaps (**33, 34**) respectively associated with the bottom (**11**) and the lid top surface (**14**) are at least partially formed with a smaller width than the side flaps (**23, 24**) i.e. lid side flaps (**35, 36**) associated with the front wall (**10**) and the other surface areas (lid top surface **14**, lid front wall **15**).

4. A package according to claim **1**, characterized in that the corner flaps (**27, 28**) are formed as folding flaps that are directly connected with the bottom (**11**) having the smaller width over their entire length.

5. A package according to claim **3**, characterized in that the width of the narrower, side-joining surface areas is somewhat smaller than half the length of the package, i.e. of the surface areas corresponding approximately to the width of the side walls (**19, 20; 21, 22**).

6. A package according to claim **1**, characterized in that lid side flaps (**33, 34; 35, 36**) are joined at opposite sides of the lid top surface (**14**) and lid front wall (**15**) provided with angled edges (**37, 38**), corresponding to the angled edges of the lid in the area of the side walls (**19, 22**).

7. A package according to claim **1**, characterized in that the lid inner flap (**16**) that joins onto the lid front wall (**15**) has smaller dimensions in the longitudinal direction of the blank than the lid front wall (**15**).

8. A package according to claim **1** characterized in that the areas of the narrow side flaps (**29, 30**) directed toward each other and the corner flaps (**27, 28**) are formed with angled edges (**54, 55**) and fold to abut as in a mitered joint.

9. A package according to claim **1**, characterized in that the corner flaps (**27, 28**) are partly formed in the width of the narrow folding flaps and partly in the width of the wide folding flaps with a preferrably angled transition edge (**57**).

10. A package according to claim **9**, characterized in that the corner flaps (**27, 28**) are formed as triangles with angled transition edges (**57**) that run to the blank main portion (A) on the side facing the narrow folding flaps.

11. A package according to claim **1**, characterized in that the inner lid side flaps (**33, 34**) are arranged on the side facing the bordering narrow folding flap, having the same width, and are arranged on the side facing the outer lid side flaps (**35, 36**) having the width thereof, and provided with an angled edge (**37**) as a transition.

12. A package according to claim **1**, characterized in that a folded inner lip flap (**16**) is arranged on the free edge of the lid front wall (**15**) as reinforcement.

13. A package according to claim **1**, characterized in that the corner flap (**27, 28**) in the area of the bottom (**11**) is folded in partially between the outer broader side flap (**23, 24**) and the inner narrower side flap (**29, 30**).

14. A package according to claim **13**, characterized in that the accordingly formed side flaps (**29, 30**) and corner flaps (**27, 28**) are folded in the area of the bottom (**11**) in a common level to form a mitered joint.

15. A package according to claim **13**, characterized in that the narrow center flap (**31, 32**) that joins the side of the lid back wall (**13**) is folded in the area of the lid between the outer lid side flap (**35, 36**) and the inner lid side flap (**33, 34**).

16. A package according to claim **15** characterized in that only the outer lid side flap (**35, 36**) is provided with two spacedly arranged gummed strips (**51, 52**), by means of which the outer lid side flap (**35, 36**) is connected with the center flap (**31, 32**) on one side, and with the inner lid side flap (**33, 34**) on the other side.

17. A packaging according to claim **1**, characterized in that the lateral or side flaps of the lid (**33, 34; 35, 36**) are dimensioned and shaped such that they completely cover up the side wall (**21, 22**) of the lid.

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